GroupsAreMeantToBeBroken : Summary

Short description of idea?

- o   An LLM powered Nutritionist Chatbot

What problem / whose problem does that solve?

- o   It helps people get a better hold of their nutrients and help them improve their diet.
- o   Real Nutritionists might me inaccessible because of the associated expense or even language barrier.

What makes you think that you might be able to solve / address it?

- o   Existing Chatbots / User Feedback / Prompt Engineering

How do you know to what extent you have solved it? How do you evaluate the quality of your product?

- o   Feedback Analysis / Coherency / Preferences

How will you make sure that your system doesn't cause other problems?

- o   We will try to have logical solutions for most problems, and we will deal with the rest of them as we encounter them.

What will you use to build it? What kind of resources will you need for that, and do you have them?

- o   LangChain, ReactJS, etc. And an access to an LLM API.

What do you need to deploy your system?

- o   With enough time, and relevant compute resources we should be able to deploy our LLM pretty well.

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Idea Description

Our proposed chatbot "Gini" aims to provide **personalized** nutrition **advice** and guidance to users based on their individual needs and goals.

- **Meal Planning**: Assists users in creating balanced meal plans, considering calorie intake, macronutrient distribution, and food preferences.

- **Recipe Suggestions**: Offers healthy and delicious recipe suggestions aligned with dietary preferences and nutritional needs.

- **Nutritional Information**: Provides comprehensive nutritional information for various foods, including calorie count, macronutrient content, vitamins, and minerals.

What / whose problem does that solve?

- Gini addresses the common challenge of navigating the complex world of nutrition and health by providing personalized guidance and support to users.

- Specifically, it solves the following problems:
  - Difficulty in Meal Planning
  - Limited Recipe Options
 - Lack of Nutritional Information

What makes you think that you might be able to solve / address it? (What are your starting points? Any prior art you can base this on?)

Existing Chat Bots: Study on pretrained LLMs which are specifically tuned for such tasks.

User Feedback: Gather feedback from users to understand their needs, preferences, and challenges related to nutrition. This feedback can guide the development of personalized and relevant responses.

Prompt Engineering: Tuning LLMs with prompt engineering to get tailor-made nutritionist feedback.
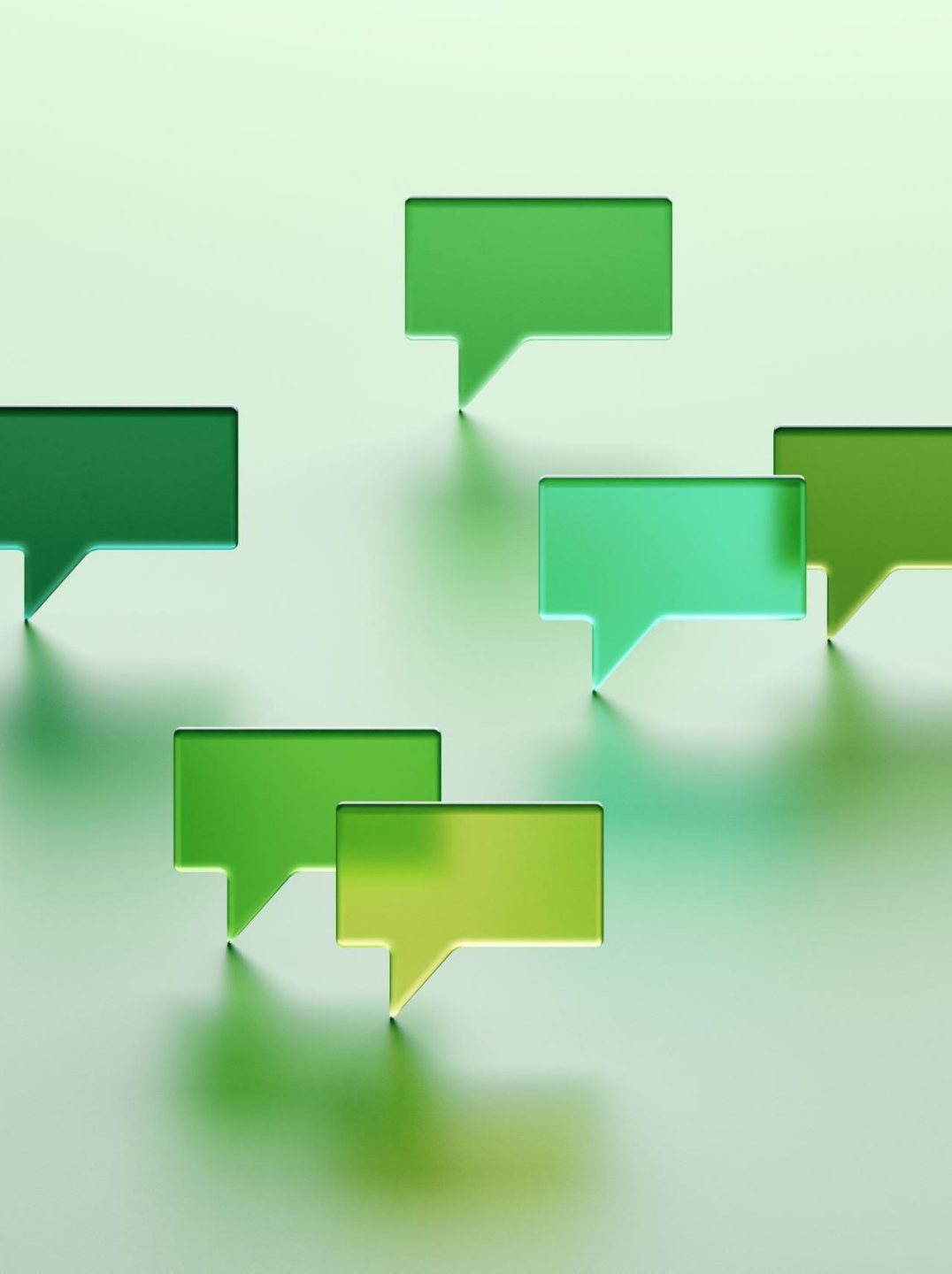
How do you know to what extent you have solved it? How do you evaluate the quality of your product?

- Feedback Analysis: Continuously analyze user feedback to identify areas for improvement and make necessary adjustments to your chat bot's functionality and content.

How will you make sure that your system doesn't cause other problems?

Issues:

- Generates a nutrition meal that doesn't go together

- Incompatible foods - I have allergies etc.

- Ask person for preferences - vegetarian vegan etc.

- Ask where the user is from - Gives region based

- For user privacy and data protection, we will login and authenticate users.

- User preferences will be collected before the meal plans are suggested

- Let the problems come, then we will find a solution.

Potential Caveats

Issues:

- LangChain may not support the model provided by the university.

- The model may not incorporate the relevant training data.

- Incompatibility issues may arise on local hardware, making it impossible to work with the given library.

Solution:

In case the library or model do not align with the project's vision, they will be replaced with suitable alternatives and the reasons of incompatibility will be reported accurately.

What will you use to build it? What kind of resources (data, compute, time, ...) will you need for that, and do you have them?

- Frontend: (HTML,CSS, JS, Bootstrap) ReactJS

- Backend and Chatbot: Lang Chain?

- Deployment:
  - Frontend: Vercel
  - Backend: Lang Smith?

- Resources:
  - Model: To be provided later.
  - Time: Ample
  - Compute resources: If required, we will coordinate with the faculty otherwise go with Google Colab.